

## IN THE CLAIMS

The following listing of claims replaces all prior versions and listings of claims in the case.

1-25. (Canceled)

26. (Currently Amended) An electroporation apparatus for applying an electric pulse or electric pulses to a specimen including cells to thereby electroporate cell membranes and infuse foreign materials into the cells, comprising:

a long hollow specimen-stuffing member of non-conductive material;

a pressure maintaining means connected to a distal end of the specimen-stuffing member for fluid communication;

a reservoir connected to the other distal end of the specimen-stuffing member for fluid communication and disposed with an electrode for contacting the specimen or an electrolytic solution; and

a reservoir holder including a fixing unit for fixing the pressure maintaining means, an electrode terminal for electrically connecting the fixing unit to the pressure maintaining means and another electrode terminal for electrically connecting the electrode disposed at the reservoir;  
~~The electroporation apparatus according to claim 25,~~ wherein the pressure maintaining means is a pipette in which a conductive contact is disposed at part of the pipette body thereof and a movable electrode is inserted into the conductive contact for communication with a piston the movable electrode also inserted into the specimen stuffing member for fluid communication and for contacting the specimen or an electrolytic solution disposed in the specimen stuffing member, the pipette in electrical connection with the movable electrode through the conductive contact and wherein the hollow specimen-stuffing member is directly attached and detached to a tip mounting shaft of the pipette.

27. (Currently Amended) The electroporation apparatus according to claim 26 ~~25~~, wherein the hollow specimen-stuffing member is a capillary or a tubing.

28. (Currently Amended) The electroporation apparatus according to claim 26 ~~25~~, wherein the specimen-stuffing member has a ratio ( $R$ ,  $\text{cm}^{-1}$ ) of a longitudinal length ( $L$ ,  $\text{cm}$ ) to horizontal cross-sectional area ( $A$ ,  $\text{cm}^2$ ) in the range of 50 to 10,000.

29-42. (Cancelled)

43. (Currently Amended) An electroporation system for introducing foreign materials into cells by electroporating cell membranes by way of applying an electric pulse or electric pulses to a specimen including the cells, comprising:

the electroporation apparatus according to ~~claim 18~~ claim 26; and

a pulse generator for generating an electric pulse,

the reservoir is disposed with an electrode contacting the specimen or an electrolytic solution, the specimen-stuffing member is filled with the specimen by the pressure maintaining means, the specimen or the electrolytic solution filled in the reservoir is connected to a distal end of the specimen-stuffing member for fluid communication, and an electric pulse or electric pulses are applied to an electrode contacting the specimen or the electrolytic solution filled in the reservoir and another electrode inserted into an electrode insertion unit of the connector to thereby electroporate the cells in the specimen filled in the specimen-stuffing member.

44. (Previously Presented) The electroporation apparatus according to claim 26, wherein the movable electrode is a plastic of which surface is coated with conductive material.

45. (Currently Amended) An electroporation system for introducing foreign materials into cells by electroporating cell membranes by way of applying an electric pulse or electric pulses to a specimen including the cells, comprising:

the electroporation apparatus according to claim 26 ~~25~~; and

a pulse generator for generating an electric pulse,

wherein the pressure maintaining means is a pipette disposed at part of the body thereof with a conductive contact, and a movable electrode disposed inside the specimen-stuffing member is inserted for communication with a piston, and

wherein the hollow specimen-stuffing member is directly detached and attached to a tip mounted shaft of the pipette, the movable electrode is raised or lowered to a distal end of the specimen-stuffing member by a depression button of the pipette to fill the specimen in the specimen-stuffing member or retrieve it, the pipette is inserted and fixed to a reservoir holder inner pipe, a contact of the pipette body is electrically connected to the electrode terminal via the fixing unit of the reservoir holder inner pipe, the specimen-stuffing member is so positioned as to fluidly communicate with the specimen or the electrolytic solution stored in the reservoir, and an electric pulse or electric pulses are applied to the electrode contacting the specimen or the electrolytic solution stored in the reservoir to thereby electroporate the cells in the specimen filled in the specimen-stuffing member.

46 – 47. (Cancelled)